THE PLANT DISEASE REPORTER

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THE PLANT DISEASE SURVEY, DIVISION OF MYCOLOGY AND DISEASE SURVEY
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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. The reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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CHECK-LIST REVISION

Freeman Weiss

HORDEUM (GRAMINEAE)

HORDEUM JUBATUM L., FOXTAIL BARLEY (1); perennial weed grass indigenous to the central prairies and western plains but introduced eastward and occurring everywhere except the Southeast; of some forage value before heads form, but hazardous to livestock thereafter because of the awns. The var. CAESPITOSUM (Scribn.) Hitchc. (2), with short awns, occurs in the western part of this range.

Claviceps purpurea (Fr.) Tul., ergot. Iowa, Mont., Okla., Oreg., Wis. (1); Mont., Wash. (2).

Colletotrichum graminicolum (Ces.) G. W. Wils., anthracnose. Pa.

Erysiphe graminis DC., powdery mildew. Minn., Miss., Mo., Mont., Wis. The mildew on this host has been assigned to the f. sp. hordei Marchal, but belongs to different physiological races from those identified on barley, to all of which that are thus far known this plant is resistant.

Fusarium spp., foot rot, root rot. The identified spp. include F. culmorum (W. G. Sm.) Sacc., in Wash.; F. equiseti (Cda.) Sacc., F. scirpi C. R. Lambert & Fautr. vars. acuminatum (Ell. & Ev.) Wr. and compactum Wr., and F. sporotrichioides Sherb., in N. Dak.

Helminthosporium sp., leaf spot. Minn.

H. sativum Pam. King & Bakke, root rot. N. Dak.

Phyllachora graminis (Pers. ex Fr.) Tul., tar spot. Ill., Wis.

Puccinia glumarum (Schm.) Eriks. & Henn. (II, III), stripe rust. Colo., Idaho, Mont., Oreg., Utah, Wash., Wyo. (1); Mont., Wash. (2).

P. graminis Pers. (II, III), stem rust. General in the West, from the upper Mississippi Valley to Colo. and central Wash., occasional eastward to Ky., Mich. and Pa. The vars. secalis and tritici Eriks. & Henn. occur commonly. Also on (2) in Mont.

P. montanensis Ell. (II, III), brown stripe rust. Colo., Mont., Utah. C and I on Berberis fendleri A. Gray.

P. rubigo-vera (DC.) Wint. (II, III), leaf rust. Mich. and Ind. to Colo. and N. Dak.; occasional eastward to N.Y. and Va. The vars. agropyrina (Eriks.) Arth. and impatientis (Arth.) Mains have been identified; several other vars. or forms have been distinguished by Mains.

Pythium arrhenomanes Drechs., root browning. N. Dak.

Rhizoctonia solani Kuehn, secondary root rot. N. Dak.

Sclerotium rhizodes Auers., leaf and sheath rot. Wis.

Scolecotrichum graminis Fckl., brown stripe. Widespread.

Septoria passerinii Sacc., leaf spot. Iowa, Minn., N. & S. Dak., Wis.

Urocystis agropyri (Preuss) Schroet., flag smut. Oreg., Wis.

HORDEUM JUBATUM cont.

Uromyces hordeinus Arth. (II, III), rust. Miss. O and I on Nothoscordium bivalve (L.) Britt.

U. jacksonii Arth. (II, III), rust. Oreg. O and I unknown. U. mysticus Arth. II,III,rust. Colo.,Ida.,N.Mex.,Utah. O and I unknown.

Ustilago bullata Berk., head smut. Wis. and Iowa to Utah and Wash. (1); Mont., Utah (2). Usually identified as U. lorentziana Thuem., it is indistinguishable morphologically from the older U. bullata according to G. W. Fischer.

U. sitanii G. W. Fisch., loose smut. Wash. (1, 2).

HORDEUM NODOSUM L., MEADOW BARLEY (1). Perennial of moist meadows in the Western States, chiefly at low altitudes from the Great Plains to California and Alaska, occasional in prairies in the East and South and sparingly introduced into the Northeast; of limited forage value before heading. A few records are included on H. MURINUM L., MOUSE B. (2), annual, introduced from Europe and occurring in fields and waste ground in the Eastern and also the Pacific Coast States; and on H. PUSILLUM Nutt., LITTLE B. (3), annual, occurring in old fields and plains nearly throughout the U. S., more common west and south; of limited forage value for livestock but grazed by wildlife.

Ascochyta graminicola Sacc., leaf spot. Alaska (1).

Calonectria graminicola (Berk. & Br.) Wr. (Fusarium nivale (Fr.) Ces.), snow mold. Wash. (1), Oreg. (2).

Claviceps purpurea (Fr.) Tul., ergot. Minn., Alaska (1).

Colletotrichum graminicolum (Ces.) G. W. Wils., anthracnose. Kans. (3).

Erysiphe graminis DC., powdery mildew. Oreg. (1); Ga., Kans. (3). Both hosts are resistant to the physiological races commonly occurring on barley.

Fusarium culmorum (W. G. Sm.) Sacc., foot rot. Wash. (2).

Helminthosporium sativum Pam. King & Bakke, spot blotch, root rot. Wash. (2).

H. teres Sacc., net blotch. Calif. (2).

Ophiobolus graminis Sacc., foot rot. Ark. (3).

Puccinia coronata Cda. (II, III), crown rust. Natural infection reported on (1), P.D.R. Suppl. 130.

P. glumarum (Schm.) Eriks. & Henn. (II, III), stripe rust. Colo., Idaho (1); Calif., Oreg., Wash. (1, 2); Utah (3).

P. graminis Pers. (II, III), stem rust. Idaho, Mich., Wyo. (1); Oreg., Wash. (1, 2); Kans. (3). Natural infection with vars. secalis and tritici Eriks. & Henn. reported on (3); with var. tritici on (1).

P. hordei Fckl. (II, III), leaf rust. Calif., Oreg. (1, 2); Wash. (2). O and I unknown.

P. pygmaea Eriks. (II), rust. Alaska. On H. nodosum var. boreale (Scribn. & Smith) Hitch.; no other record on Hordeum known. O and I on Berberis sp. in Europe.

HORDEUM NODOSUM cont.

Puccinia rubigo-vera (DC.) Wint. (II, III), leaf rust. Calif., Colo., Idaho, Oreg., Utah, Wash., Wis. (1); Kans., Tex. (3). Several vars. or special forms, none commonly occurring on cereals, are distinguished by Mains.

Rhynchosporium secalis (Oud.) J. J. Davis, scald. Calif., Oreg. (2).

Scolecotrichum graminis Fckl., brown stripe. Idaho, Mont., Oreg., Wash. (1); Kans. (1, 3).

Septoria passerinii Sacc., leaf spot. Iowa, Mont., Oreg. (1).

Tilletia texana Long, bunt. Tex. (1), Mo. (3).
T. foetida (Wallr.) Liro also can infect (1).

Urocystis agropyri (Preuss) Schroet., flag smut. Oreg. (1).

Uromyces hordeinus Arth. (II, III), rust. Calif., Colo., Kans., La., Tex., Utah, Wash. (1); Ind. to Ga., Tex. and Nebr. (3).

U. jacksonii Arth. & Fromme (II, III), rust. Calif., Colo., Oreg., Wash. (1).

U. mysticus Arth. (II, III), rust. Utah, Wash. (1).

Ustilago bullata Berk. (U. lorentziana Thuem.), head smut. Utah, Wash. (1); Oreg. (2); Calif. (2, 3).

U. hypodytes (Schlecht.) Fr., flagsmut. Wash. (1).

HORDEUM VULGARE L., BARLEY. Most of these records pertain to types of barley as a whole, but some specify one or more of the numerous agronomic types. Of these it is practicable to list only a few of the principal types, such as H. DISTICHON L., TWO-ROWED B. (2), H. HEXASTICHON L., SIX-ROWED B. (3), H. V. var. TRIFURCATUM, BEARDLESS B. (4), for which supplementary records are given.

Alternaria sp. (sometimes reported as A. tenuis Nees ex Wiltshire), black point, kernel smudge, seed mold. Cosmopolitan; associated with mechanical or weather damage.

Aphanomyces euteiches Drechs., in roots, ? rootlet rot. Wis.

Ascochyta graminicola Sacc., leaf spot. Ill., Wash.

Calonectria graminicola (Berk. & Br.) Wr., (Fusarium nivale (Fr.) Ces.), snow mold. Mich., Minn., Wis.

Cercosporella herpotrichoides Fron, foot rot. Idaho, Oreg., Wash.

Cladosporium spp. (C. graminum Cda., C. herbarum Lk.), seed mold, sometimes secondary on leaves; not shown pathogenic. Cosmopolitan.

Claviceps purpurea (Fr.) Tul. ergot. General, on all types.

Colletotrichum graminicolum (Ces.) G. W. Wils., anthracnose. N.Y. to Ala., Tex. and Minn.

Erysiphe graminis DC., powdery mildew. General in humid regions, especially on winter barley, less frequent on spring barley in the North and West. Usually identified as f. sp. hordei Marchal, and restricted to hosts of the genus Hordeum, but the physiological races occurring on barley are limited to H. vulgare and closely related spp. On all barley types but individual vars. are resistant.

HORDEUM VULGARE cont.

Fusarium avenaceum (Fr.) Sacc., associated with scab (head blight), perhaps secondary. Wis.

F. culmorum (W. G. Sm.) Sacc., head blight, root and stem rot. Iowa, Minn., Mo., Nebr., Oreg., S. Dak., Wash.

F. c. var. leteius Sherb., seedling blight. Calif., Oreg.

F. equiseti (Cda.) Sacc., F. oxysporum Schlecht. emend. Snyder & Hansen, and F. scirpi C. R. Lambert & Fautr. var. acuminatum (Ell. & Ev.) Wr., secondary root rot. N. Dak., Wis. On all types.

(F. graminearum Schwabe): Gibberella zeae.

Gibberella zeae (Schw.) Petch, scab, head blight. Eastern and Central States to Kans. and N. Dak., also Calif. but not in Pacific Northwest. On all barley types. Various Fusarium spp. associated.

Helminthosporium californicum Mackie & Paxton, leaf blotch. ? Ala., Calif.

H. gramineum Rabh., stripe. General, on all types. Conidial stage of Pyrenophora graminea S. Ito & Kuribayashi, found in Japan but not yet reported in the U. S.

H. sativum Pam. King & Bakke, spot blotch (leaves), root rot. General, on all types. Conidial stage of Ophiobolus sativus S. Ito & Kuribayashi, found in Japan but not yet reported in U. S.

(H. teres Sacc.): Pyrenophora teres

Heterodera marioni (Cornu) Goodey, root knot. Hawaii.

Heterosporium sp. (? avenae Oud.), on leaves, associated with stripe. Mont.

Hormodendron ? hordei Bruhne, leaf spot. Mont.

Marasmius tritici Young (? M. scorodonius Fr.), root and collar rot. Ill.

Naucoria cerealis Boewe, root and collar rot. Ill.

Ophiobolus graminis Sacc., take-all. Calif., ? Iowa, ? Mo., ? Nebr., Oreg.

Pholiota dura Bolt. ex Fr., collar rot. Oreg.

Phoma terrestris Hansen, secondary root rot, pink root. Iowa, N. Dak., ? Oreg.

Pseudomonas atrofaciens (McCull.) Stapp, basal glume rot. Ill.

Puccinia anomala Rostr. (II, III), dwarf leaf rust. General, on all types. O and I on Ornithogalum spp. in Europe;*

P. glumarum (Schm.) Eriks. & Henn. (II, III), stripe rust. Western N. and S. Dakota to Colo., Calif. and Wash. On all types.

P. graminis Pers. (II, III), stem rust. General. Natural infection with the vars. secalis and tritici Eriks. & Henn. is recorded. On all types.

P. rubigo-vera (DC.) Wint. (II, III), leaf rust. Relatively rare, though authentic records exist; most of the leaf rust on barley is caused by P. anomala. Natural infection with the vars. agropyrina (Eriks. & Henn.) Arth., secalis (Eriks.) Carleton, and tritici (Eriks. & Henn.) Carleton is recorded.

Pyrenophora teres (Died.) Drechs. (Helminthosporium teres Sacc.), net blotch. Widespread but most frequent in the North Central and Eastern States, occasionally in the South and also extending to Calif., Oreg. and Idaho. Probably this fungus also reported

* and shown experimentally to be produced on O. umbellatum L. in the U.S.

HORDEUM VULGARE cont.

under the older names P. relicina (Fr.) Fckl. and P. trichostoma (Fr.) Fckl., of uncertain application.

Pythium spp., root rot, seedling blight. Widely distributed but infrequent. Identified spp. include P. aristosporum Vanterpool, N. Dak.; P. arrhenomanes Drechs., S. Dak.; P. graminicolum Subra., Iowa; P. hypogynum Middleton, Mo.

Rhizoctonia solani Kuehn, secondary root rot. Oreg., Wash.

Rhynchosporium secalis (Oud.) J. J. Davis, scald. Especially in the North Central States and Pacific Northwest, occasional south to Ala. and Tex., also in Calif. On all types.

Sclerospora macrospora Sacc., downy mildew. Calif.

Scolecotrichum graminis Fckl., brown stripe. Iowa, Kans., Ohio, Utah.

Septoria sp., leaf spot. Idaho, Iowa, N. & S. Dak., Oreg.; foot rot, Tex.

S. passerinii Sacc., speckled leaf blotch. North Central States to S. Car., Ark. and N. Dak.; Idaho, Oreg.

Trichoderma viride Pers. ex Fr., seed mold. Minn.

Tylenchus spiralis Cassidy, in roots. Hawaii

Ustilago hordei (Pers.) Lagerh., covered smut. General, on all types.

U. nigra Tapke, shallow loose smut. Widespread; specifically identified in Ark., Colo., Del., Ill., Iowa, Kans., Md., Mo., N.Y., Pa., Wash., Wis., but has been confused with the following. Also on (2).

U. nuda (Jens.) Rostr., deep loose smut. General, on all types.

Wojnowicia graminis (McAlp.) Sacc. & D. Sacc., secondary root rot. Oreg., Wash.

Xanthomonas translucens (L. R. Jones, A. G. Johns. & Reddy) Dowson, bacterial blight, leaf spot. Especially in the North Central States, occasionally south to S. Car., and Tex. and west to Calif. and Oreg. This race has been designated f. sp. hordei Hagborg.

Bends (?) - cause unknown. Miss.

False stripe - cause unknown, ? nutritional. See also non-parasitic leaf spots. Ind., Mo., N.Y., N. Dak., Wis.

Foot rot - cause undetermined. Calif., Md., Mich., Oreg., Va., Wash. See also Fusarium, Gibberella, Helminthosporium, Ophiobolus and Pythium.

Leaf spots, non-parasitic - causal factors not fully known but apparently due to malnutrition (e.g. ? boron injury, potassium deficiency; prevalent in dry seasons. Calif., Ariz., Idaho, Minn., Mo., Wis.

See Helminthosporium, Pyrenophora, Septoria.

HYSTRIX (GRAMINEAE)

HYSTRIX PATULA Moench, BOTTLEBRUSH (1). Perennial of moist woodlands occurring from the Atlantic Coast to the Mississippi Valley, of minor forage value, occasionally grown for ornament. H. CALIFORNICA (Boland.) Kuntze (2), similar, occurs in the coastal

area of central Calif.

Cercospora sp., Ell. & Gall., leaf spot. Ill. (1).
Claviceps purpurea (Fr.) Tul., ergot. Ind. (1).
Epichloë typhina (Pers. ex Fr.) Tul., cat-tail, choke. Mich., Minn., Mo., Wis. (1).
Helminthosporium sativum Pam. King & Bakke, root rot. Minn. (1).
Phyllachora graminis (Pers. ex Fr.) Fckl., tar spot. General (1).
Piricularia parasitica Ell. & Ev., ? leaf spot, ? parasitic on Phyllachora. Wis. (1).
Puccinia glumarum (Schm.) Eriks. & Henn. (II, III), stripe rust. Idaho (1), Calif. (2).
P. graminis Pers. (II, III), stem rust. Minn. Natural infection with vars. secalis and tritici Eriks. & Henn. recorded.
P. montanensis Ell. (II, III), brown stripe rust. Iowa.
P. rubigo-vera (DC.) Wint. (II, III), leaf rust. Ind., Iowa, Ky., Mich., Minn., Mo., N.Y., Va., Wis. (1). The vars. agropyrina (Eriks.) Arth., apocrypta (Ell. & Tracy) Arth., and especially impatientis (Arth.) Mains have been identified.
Septoria microspora Ell. & Ev., leaf spot. Ind.
Ustilago striaeformis (West.) Niessl, stripe smut. Kans.

IMPERATA (GRAMINEAE)

IMPERATA spp., SATINTAIL. Perennials of open woods, old fields and waste ground of the far South and tropical America.

Phyllachora oxyspora Starb., tar spot. P. R. On I. contracta (H.B.K.) Hitchc.
Puccinia kaernbachii (P. Henn.) Arth. (II), rust. Ariz. O and I unknown. On I. hookeri Rupr.

KOELERIA (GRAMINEAE)

KOELARIA CRISTATA (L.) Pers., PRAIRIE JUNEGRASS (1). Perennial bunchgrass of prairies, plains and open woods throughout the Western States, occasional in the East and South; furnishes forage for livestock, where sufficiently abundant, and food for wildlife. K. PHLEOIDES (Vill.) Pers., ANNUAL KOELERIA (2), a European annual, has been introduced for forage trials and is locally established in the Gulf and Pacific Coast States.

Cercosporella herpotrichoides Fron, foot rot. Wash. (1).
Claviceps purpurea (Fr.) Tul., ergot. Ariz., Iowa, Kans., Okla., Wis. (1).
Curvularia geniculata (Tracy & Earle) Boed., secondary root rot. Mont. (1).
Epichloë typhina (Pers. ex Fr.) Tul., cat-tail, choke. N. & S. Dak., Pa., Wis. (1).
Erysiphe graminis DC., powdery mildew. Wash. (1).

KOELERIA CRISTATA cont.

Fusarium scirpi C. R. Lambert & Fautry var. acuminatum (Ell. & Ev.) Wr., secondary root rot. N. Dak. (1).

Phoma terrestris Hansen, secondary root rot. N. & S. Dak. (1).

Pseudomonas coronafaciens (Elliott) Stapp, halo blight. N. Dak. (1).

Puccinia conspicua (Arth.) Mains (II, III), rust. Colo. (1). O and I on Dugaldea hoopesii (Gray) Rydb.

P. coronata Cda. (II, III), crown rust. Wyo.

P. glumarum (Schm.) Eriks. & Henn. (II, III), stripe rust. Wash.

P. graminis Pers. (II, III), stem rust. Calif., Kans., Mich., Nebr., N. & S. Dak., Oreg., Wash. (1). Natural infection with the vars. avenae Eriks. & Henn. and phlei-pratensis Stakman & Piemeisel recorded.

P. koeleriae Arth. (II, III), leaf rust. N. Dak. to N. Mex.; Calif. and Wash. - O and I on Berberis fendleri Gray, Mahonia aquifolium (Pursh) Nutt. and M. repens (Lindl.) Don.

P. liatridis (Webber) Bethel (II, III), rust. Colo., N. Mex., N. & S. Dak., Wis. (1). O and I on Liatris spp.

P. monoica (Pk.) Arth. (II, III), rust. Calif., Colo., N. Mex., Oreg., Wyo. (1). O and I on Arabis spp. and other Cruciferae.

P. stipae Arth. (II, III), rust. Colo. O and I on various Compositae.

Rhizoctonia solani Kuehn, secondary root rot. N. Dak.

Scolecotrichum graminis Fckl., brown stripe. N. Dak., Wyo.

Selenophoma donacis (Pass.) Sprague & A. G. Johns. var., leaf & stem speckle. N. Dak., Wash., Wyo.

Septoria calamagrostis (Lib.) Sacc. f. koeleriae (Cocc. & Mor.) Sprague, leaf spot. Oreg., Wash., Wyo.

Urocystis agropyri (Preuss.) Schroet., flag smut. Ariz.

Bends - cause unknown. Mich., Wash.

DIVISION OF MYCOLOGY AND DISEASE SURVEY

IMMATURITY AND SPOILAGE IN THE IOWA 1944 CORN CROP

Edgar F. Vestal

The unexpectedly large 1944 Iowa crop of immature corn has presented the farmer with one of the most serious storage problems he has faced in a good many seasons. Much of this immaturity is in the cob, which never had time to dry out before harvest.

Farmers harvested what they believed was the driest corn first, placing it in the covered cribs. Later, as the cribs overflowed into the alleyways, the wettest corn was harvested and when the alleyways were full circular cribs were hastily built outside for the surplus. Iowa, Nebraska and South Dakota have each had a large surplus of wet corn piled out on the ground, mostly without cover. Much of this corn has already been fed and most of the rest will be fed before it spoils, but the corn in the covered cribs is also wet and must be protected from molds or it will spoil very quickly when warm weather comes.

Part of the time in company with Mr. C. K. Shedd of the U. S. Department of Agriculture and the Agricultural Engineering Department of Iowa State

College, and part of the time with Dr. J. C. Gilman of the Botany and Plant Pathology Section of Iowa State College, surveys were made by the writer during January and February covering some 30 counties in the northern half of Iowa.

When the percentage of moisture determined for samples taken on these surveys was compared with that recorded for samples taken 1 to 2 months earlier, and submitted to the AAA office, it was found that at least 75% of the samples taken at the later date were higher in moisture content. One explanation offered for this increase is that in the fall the kernels were drier than the cobs and that during the winter months moisture has moved from cob to kernels. Comparatively few samples collected on these surveys have tested as low as 20% moisture and some have tested over 30%. The range of moisture percentages of the various sections does not show much variation between the different sections of the State. In sections like Mitchell, Howard, Chickasaw and Fayette Counties there is comparatively little surplus corn, and if the farmers follow the instructions given by the Iowa Extension Department, the Farm Bureau, County Agents and others, there should be little if any loss. But in the northwestern and other sections of the State, some serious work and planning will be necessary to prevent molding.

In cooperation with Dr. J. C. Gilman, a number of experiments are being initiated to gather data on such things as spore load, rate of spoilage at various temperatures, species of molds most common in the kernels, etc.

Ear rot determinations made during January and February of the corn in cribs have shown higher percentages of infected ears than those recorded during October and November, just prior to picking time (PDR 28: 1149, Dec. 1, 1944). Farmers reported that they had thrown out all moldy ears they saw, in some cases up to 10%, when picking. In spite of this, crib examinations showed as much as 20% Diplodia-, Fusarium-, and Nigrospora-infected ears in some sections of the northwestern part of the State. The frequency of occurrence was in the order named. The average of all 3 was in the neighborhood of 8 to 10%.

It has been a general observation that ear rots are less serious in the northeastern part of the State than in other sections. Data collected on the recent survey showed that the percentage of the ear rots in cribbed corn in Mitchell, Howard, Chickasaw, Fayette and Bremer Counties ranges from a trace to 2 or 3%, with the average not over 2%.

Because of a number of factors beyond the present control of the State and Federal agencies, the prevention of molding in the wet corn when temperatures rise will depend largely, if not entirely, upon the farmer.

At present all agencies are urging the same general measures for prevention of molding. These are:

1. Feed the wettest corn first.
2. Remove all corn from the outdoor cribs and place it on dry floored, covered cribs.
   If this is not possible, then lay a foundation on a dry area and move the corn to it.
   Remove all shelled corn, shucks, silks, etc. These prevent ventilation.
3. Remove corn from alleyways. This permits ventilation.

4. Put ventilators in all cribs. When doing this, remove loose corn, shucks and silks from the corn.
5. If possible, sell corn that cannot be fed before danger of molding when warm weather comes.
6. Exchange wet corn with neighbors who have dry corn but can use wet corn for immediate feeding. Differences in value of the corn can be adjusted between farmers.
7. Where possible, artificial drying to be resorted to.
8. If proper equipment is at hand, limited amounts of wet corn may be made into ensilage. Iowa Station bulletins No. 216 and 273 and Iowa Station Circular No. 40 cover the details for making of ensilage.

Thus for the moment, the plant disease prevention in Iowa is chiefly concerned with the saving of as much of the 1944 corn crop as possible. If farmer cooperation can be secured, much can be done. The farmer has been told repeatedly what to do. It is hoped that he will do it. EMERGENCY PLANT DISEASE PREVENTION PROJECT

REPORTS ON DISEASES OF CEREALS AND GRASSES

Reports are of Emergency Plant Disease Prevention Project surveys.

DISEASES OF SMALL GRAINS IN NORTH TEXAS: During the period February 26, a survey was made of North Texas small grains. The survey covered Greenville westward to Denton, Seymour, Vernon, Childress, Floydada, Lubbock, and east from Post through Stamford and Eastland to Waco. The small grains were still being grazed and the plants were small. The following diseases were observed:

Oats. Crown rust (Puccinia coronata) was observed at Greenville, McKinney, and Denton. No crown rust was observed farther west, and oats in the Bosque Valley (Bosque County) were free of rust.

Helminthosporium leaf spot (Helminthosporium avenae) was present to some extent in all fields. Specimens of what appeared to be a bacterial leaf spot were taken at Chillicothe, and have been sent for identification.

Wheat. Leaf rust (Puccinia triticina) [P. rubigo-vera var. tritici] is common to all areas. Infection was variable, but in all fields pustules were observed on the leaves closely appressed to the ground.

Powdery mildew (Erysiphe graminis) was present in fields east of Chillicothe and occasionally found farther west. Some mildew was evident in the Bosque County fields.

Septoria leaf spot (Septoria tritici) had caused slight damage to wheat in the Denton area and, while present in nearly all fields, was found to be severe in only one field in Wilbarger County.

There was a trace of Helminthosporium leaf spot (Helminthosporium sativum) present in all fields.

Barley. Powdery mildew (Erysiphe graminis) was causing slight damage to barley at Denton, Seymour, Chillicothe, and Dublin. -- George E. Altstatt.

UNDETERMINED CONDITION CAUSING DYING OF CATS IN MISSISSIPPI: During the period from February 5 to 17 surveys were made in the Delta area of Mississippi. A large acreage has been planted to oats this year in the Delta. In most fields the plants were from 3 to 6 inches high. Areas or patches of reddish-brown dead or dying plants were observed in several fields located in the triangle formed by Greenwood, Clarksdale, and Leland. Examination revealed no signs or symptoms of disease in these plants except for occasional rotting of roots and basal portions or crowns. In general, there was no stunting, leaves appeared to be normal except for the discoloration, and roots also apparently were normal except for the occasional rotting mentioned. It was noted that many, but not all, of these dead areas were in low poorly drained parts of fields, generally at the edges; however, it was also noted that in other poorly drained parts of the same and other fields plants were normal. The uniform conditions of the dead plants and the environment suggested that the killing was due to or favored by water-logging of the soil or possibly by freezes, although plants in other fields apparently had not been affected by these factors. The only identified variety involved was Victory.

Leaf spot (Helminthosporium sp.) was generally distributed throughout the area, but there was no evident damage. -- Douglas C. Bain

DAMPING-OFF OF FLAX IN THE IMPERIAL VALLEY OF CALIFORNIA: Flax stands were good over the entire area surveyed. A trace of damping-off (Rhizoctonia solani) was noted in a few of the plantings examined. -- E. W. Bodine (surveys Jan. 25-26, with W. C. Snyder, H. N. Hansen, John T. Middleton, and George A. Zentymer of the University of California, and G. L. Winright, Farm Advisor, Imperial County).

HELMINTHOSPORIUM ON WILD OATS IN CENTRAL CALIFORNIA: Pasture land in San Mateo and Santa Clara Counties, with almost pure stands of wild oats (Avena fatua), had brown areas caused by spot blotch (Helminthosporium avenae). -- Henry Schneider, Feb. 5-10.

DISEASES REPORTED ON FORAGE AND COVER CROP LEGUMES

Reports are of Emergency Plant Disease Prevention Project surveys.

RHIZOCTONIA CANKER AND OTHER ALFALFA DISEASES IN CALIFORNIA: Canker (Rhizoctonia solani) was found in 14 of the 50 fields visited in the vicinities of Holtville, Heber, El Centro, Brawley, and Calexico, in the Imperial Valley. Damage was slight in some of the fields. In several other fields spots were present varying from 5 x 10 feet to 3 x 50 feet in size where all of the plants had been killed. Examination of roots on plants growing on the margins of such areas showed symptoms of the canker disease.

Other diseases of minor importance were downy mildew (Peronospora trifoliorum) and leaf spot (Pseudopeziza medicaginis). -- E. W. Bodine (survey Jan. 25-26, with W. C. Snyder, H. N. Hansen, John T. Middleton, and George A. Zentmyer of the University of California, and G. L. Winright, Farm Advisor, Imperial County).

Pseudopeziza Leaf Spot was moderately bad in some fields south of Salinas, in the Mission district near Soledad, and in Carmel Valley, in central California, during November. -- Henry Schneider.

Downy Mildew and Pseudopeziza Leaf Spot were commonly found in all of the fields examined in the San Fernando Valley in Los Angeles County during the week ending February 3. -- E. W. Bodine.

ALFALFA DISEASES IN MISSISSIPPI AND LOUISIANA: Stem rot (Sclerotinia sp.) was observed in 4 large fields one-year-old and older, between Hollandale and Panther Burn in the Delta area of Mississippi, during the first half of February. An estimated 5% of the plants in all fields were diseased or dead. Damage appeared to be greater in the one field planted last fall.

Downy Mildew was generally distributed on young alfalfa in Terrebonne and La Fourche Parishes in Louisiana during the latter part of November, but there was no apparent damage. In La Fourche Parish, plants in many fields visited during the last half of February were heavily infected with Rust (Uromyces striatus [var. medicaginis]). -- Douglas C. Bain.

CERCOSPORA LEAF SPOT OF ASTRAGALUS CICER IN OKLAHOMA: During July, 1944, a leaf spot on Astagalus cicer L. was found in the College Nursery at Stillwater, Oklahoma. The causal agent has been determined to be Cercospora astragali Wor. Some of the plants were almost defoliated, although others retained most of their leaves. Dr. Charles Chupp states that this is only the second report of this fungus in the United States, the first collection having been found in Wisconsin. -- D. A. Preston, Mar. 8.

DISEASES OBSERVED ON VARIOUS LEGUMES IN MISSISSIPPI AND LOUISIANA: Austrian Winter Pea and Creole Pea. During the period January 22 to February 3, winter cover crops were examined in tung and pecan groves in Pearl River and Harrison Counties in southern Mississippi. An experimental plot, about a half-acre, of an early maturing variety of Austrian winter pea was observed at the cooperative (U. S. Department of Agriculture and Mississippi Experiment Station) tung station near Poplarville. This plot was planted in late October, and at the time of examination the plants were up to 24 inches high and in full bloom, and many had pods. The ordinary variety planted at the same time was not more than 6 inches high. According to available information, seeds of the early variety were obtained from a seed company in Washington State. Ascochyta sp. and Mycosphaerella sp. were responsible for slight damage, and anthracnose (Gloeosporium sp.) caused severe injury in several localized spots throughout the plot. There was no evidence of root rot.

A root rot of undetermined cause was responsible for stunting, poor stand, and general yellowing of Austrian winter peas in a large pecan grove near Gulfport.

A large acreage of Creole pea, a variety generally grown for table use, was planted in another pecan grove near Gulfport. Considerable damage caused by a species of Ascochyta and by Peronospora pisi was evident throughout the planting.

A considerable acreage of Austrian winter pea was seen in southwestern Louisiana in fields of stubble sugarcane west of the Atchafalaya River during the last half of February. Because of heavy rains little field work could be done, but some fields were examined between showers. Anthracnose (Colletotrichum sp.) was found on leaves in the fields surveyed; it was rather widespread but appeared to be confined mostly to

the lower leaves. Damage at that time was not considered to be great. Downy mildew (Peronospora pisi) was also present but only in a mild form.

Winter pea (Lathyrus hirsutus). This cover crop, sometimes referred to as "Singletary pea", is also planted extensively in fields of stubble cane in the Franklin-New Iberia area in southwestern Louisiana. A species of Ascochyta associated with a leaf and stem disease was found to be generally distributed in fields in St. Mary Parish in February. Damage was evident and there is no doubt that a considerable amount of green manure will be lost as a result of the disease.

Sweetclover. A large acreage of Melilotus indica, is grown in Terrebonne and La Fourche Parishes, especially in some of the sugarcane fields. Early in January a root rot or wilt was causing damage in places where drainage was rather poor. Vascular discoloration was evident in some affected plants but not in others. The tap root exhibited a grayish-yellow water-soaked appearance with occasional browning of the stele. Rhizoctonia, possibly R. solani, and a species of Fusarium were recovered in culture.

Later in the month, white smut (Entyloma meliloti) was found to be generally distributed in Avoyelles, Rapides, and La Fourche Parishes on plants in varying stages of growth. Infection was heavy in many fields in Rapides Parish, and in one field of about 10 acres considerable damage had been inflicted, especially on plants in the middles and edges of rows.

A condition resembling mosaic was observed in fields in La Fourche Parish. Leaves on the upper part of the stem were mottled and somewhat crinkled, with a fascicled appearance that seemed to be due to shortening of the nodes: The plants were not dwarfed in any way but rather appeared to be, in general, taller than healthy plants. Tap roots were 3 to 4 times as long as those of healthy plants and there were very few secondary roots and nodules. It is possible that the condition was due to nitrogen deficiency; however, this does not seem a likely explanation because of the distribution of affected plants among healthy ones. In one field of 3 to 4 acres, an estimated 30% of the plants were affected.

Vetch. Downy mildew (Peronospora viciae) had caused only slight injury to vetch planted in a large pecan grove near Gulfport in southern Mississippi, when observed at the end of January.

In the latter part of February, considerable damage had already been done to vetch examined in the Poplarville area in southwestern Mississippi by an anthracnose caused by a species of Colletotrichum with small curved conidia closely resembling those of a Colletotrichum sp. found on Austrian winter pea in Louisiana (see above).

Anthracnose caused by Colletotrichum viciae was associated with patches of severely diseased plants throughout large vetch plantings in tung groves in St. Tammany Parish, Louisiana, observed at the beginning of February. -- Douglas C. Bain.

LATE BLIGHT OF POTATOES AND TOMATOES IN THE LOWER RIO GRANDE VALLEY OF TEXAS

George E. Altstatt

During the period March 6 to 13, an extensive survey of the late blight situation in the Lower Rio Grande Valley was undertaken. Late blight

(Phytophthora infestans) has spread until it includes the area from Brownsville westward to Donna and northward through Elsa, to Raymondville. The fungus was observed in the active (sporulating) stage on potatoes and tomatoes in all locations in this area.

Greatest damage to potatoes occurred in early fields in the Brownsville area and near Los Fresnos. At Southmost, near Brownsville, some fields were completely blackened by blight, but the damage at Los Fresnos appeared to be less severe. The early-planted (December) fields were most severely blighted. Fields at Raymondville showed varying degrees of blight damage, although none were so greatly damaged as those near Brownsville and Los Fresnos.

Most of the potato fields have been dusted by airplane, but it appears that under conditions existing this season, the applications have not been adequate to control the disease. Winds blow the dust from the plants, and examination reveals that after a few days there is little evidence of the fungicide on the leaves. Low-growing weeds, and plants broken over and sheltered somewhat from direct wind often show fungicide residues.

Tomatoes in the Brownsville, Los Fresnos, and Rio Hondo areas showed prominent leaf and stem lesions due to P. infestans. Stems became brittle at the point of infection and many affected plants were broken by the wind. There was some infection of the immature fruits. Generally, to the westward and northward of the Brownsville-Los Fresnos-Rio Hondo area, blight varied from trace to moderate, but active fungus infection could be found in every field.

EMERGENCY PLANT DISEASE PREVENTION PROJECT.

OTHER REPORTS ON DISEASES OF POTATO AND TOMATO

Reports are of Emergency Plant Disease Prevention Project surveys.

PRELIMINARY REPORT ON POTATOES IN SOUTHERN ALABAMA: An inspection of the potato crop in Baldwin County was made during the week of March 12. The crop as a whole at the present time is good. Stands are good, but there is a wide variation in the time of planting, plantings having been made from mid-January to the first of March. Dry weather has prevailed throughout the area during the past three weeks.

The earliest section of the county, Bon Secour, was surveyed rather carefully for late blight. No evidence of the disease was found. A number of inquiries were also made and no reports of "blight" were obtained.

Mosaic diseases were prevalent in many fields but it was too early to make readings.

In 1944, late blight was probably more severe than ever before in the history of the region. It was first reported about April 8, and by April 26, it was general over the area. -- G. M. Stone.

VIRUS DISEASES IN POTATO SEED CERTIFICATION PLOTS IN CALIFORNIA: Seed certification plots at Oceanside, San Diego County were examined on February 6 with Dr. John T. Middleton of the University of California. Mosaic (mild, crinkle, and rugose) was the most common disease encountered. Small amounts of leafroll were found in some lots. Haywire and

witches'-broom were found in only a few plants in the entire planting.--E. W. Bodine

TOMATO DISEASES IN SOUTHERN CALIFORNIA: Tomatoes examined about the end of January in the Imperial Valley were found to be free from serious diseases. A trace of early blight (Alternaria solani) was noted in one field in the Niland district.

One tomato planting inspected in the coastal area of San Diego County, February 6, was 75% infected with mosaic virus. Scattering plants were also showing symptoms of Verticillium wilt (V. albo-atrum). -- E. W. Bodine.

FURTHER REPORT ON VEGETABLE DISEASES IN NORTHERN NEW JERSEY

A. J. Mix

Report on third visit, February 14 to 16.

LETTUCE. Damping-off (Rhizoctonia sp.) of lettuce (Boston, Iceberg, and Romaine) had continued to spread in frames on several farms. Diseased plants had been removed, leaving bare areas of soil as much as 3 or 4 feet in diameter, and on the edges of these areas and beyond diseased plants could be found. Loss of stand occurred as follows: 25% in 3 frames at Farm 3; 50% in all frames at Farm 4; 25% in 8 windows of one frame (about 1/3 of the frame) at Farm 5; 25% (or more) in all frames at Farm 9; slight loss at Farm 17; 50% or more loss in 17 windows of 3 frames at Farm 18, Secaucus; 50% in Boston and 25% in Romaine at Farm 19, Secaucus. At Farms 5 and 9 the soil had been treated with chloropicrin, in all other cases the soil was untreated.

Damping-off had been seen at Farm 9 on January 2, but specimens had not been obtainable on the visits of January 31 and February 14. Absence of this disease on certain farms is worth mentioning: Farm 11, Richfield, soil steam-sterilized; Farm 10, Richfield, soil treated with chloropicrin, and 2 years "old" (i.e. 2 years since it was a cornfield); Farm 15, New Milford, soil treated; Farm 20, Secaucus, soil treated and obtained "new" last summer from a field that had grown radishes and beets.

Drop of lettuce (Sclerotinia sclerotiorum) was no longer observable at the farms where previously reported. Romaine seedlings previously showing drop (Sclerotinia minor) in the small greenhouse at Farm 18, Secaucus, had been removed, and the healthy ones transplanted to outdoor frames. The transplants all seemed healthy. Space formerly occupied by the Romaine seedlings had been sown to cabbage, now just up.

Lettuce seedlings at Farm 12, Fairlawn are outgrowing the "peculiar injury" previously mentioned. Soil samples taken from the first and third inch of soil have been submitted to the New Brunswick Experiment Station for conductivity tests. The same pythiaceous fungus is still observable in the cortex of browned roots.

A small amount of gray mold (Botrytis sp.) of lettuce was found at Farm 11, Richfield.

CAULIFLOWER. Damping off (Rhizoctonia sp.) was still present but doing little damage at Farm 16, River Edge.

"Black shank" (Rhizoctonia sp.) was present in older transplanted plants at Farm 4. The stem and main root were blackened, sometimes decorticated,

and in some cases the lateral roots were dead but in others still alive. About 25% of the plants were affected, but the loss may be less than that. The trouble was present earlier according to the growers, but plants could not be seen on earlier visits.

Downy mildew (Peronospora parasitica) of cauliflower at Farm 17, Little Ferry, is now doing very little damage.

VARIOUS. Seedlings of lettuce (Boston, Iceberg, Romaine), cauliflower, cabbage, tomatoes, and peppers were just up in flats at the greenhouse on Farm 1, Caldwell. A very small amount of damping-off (Pythium sp.) of Boston lettuce was found.

The vigor and health of young cabbage plants in the greenhouse at Farm 6 is worth mention. As stated earlier this grower's methods are sanitation, care in preparation of soil, thin seeding[1] (one ounce of seed to 8 flats, or two ounces to 15), a layer of coarse sand covering the flat, and careful watering. A few plants were up in flats in the greenhouse at Farm 8, Paterson. Here the soil is electrically sterilized and seed are treated with Spergon, an untreated flat being included in each lot.

Celery seedlings were just up (and healthy) in greenhouses at Farms 13 and 14, Paramus.

Report on fourth visit, February 28 to March 2.

LETTUCE. Damping off (Rhizoctonia sp.) was continuing at all farms where previously seen, but in most cases it had increased little since the third visit. Improved weather had allowed better aeration of the frames.

Loss of stand in seedlings was estimated as follows: Farm 14, 50% loss in 3 frames, nearly complete loss in another (unweeded) frame; Farm 3, 25% loss in 3 frames and about 10% in one frame of younger Romaine (an increase); Farm 5, 25% loss in about 1/3 of one frame (no increase, soil chloropicrin-treated; Farm 9, 10 to 50% loss (average about 25%) in 4 frames (chloropicrin-treated soil); Farm 17, slight loss and little further spread; Farm 18, 50% loss throughout 3 frames (further spread); Farm 19, approaching 50% loss in all frames (further spread). The soil is particularly heavy and wet at Farm 3, 4, 18, and 19. At Farm 18 the frames have been in the same location, using the same soil, for 35 or more years; at the other 3 farms the frames have occasionally been moved to a new location, but of course to soil that had been growing vegetables.

The losses mentioned above occur in seedling-stands and most of the growers had planted sufficient seed to have plenty of plants for transplanting (now going on). If the transplants remain healthy good crops should be secured.

Rhizoctonia damping-off was found for the first time at Farm 15, River Edge, causing about 25% loss in one-half of one frame. The plants in this frame are only now at the stage when usually attacked. Trouble had been experienced in this and adjacent frames last year. The soil was treated this year with chloropicrin.

Drop (Sclerotinia sclerotiorum) of lettuce was seen again at Farm 2. The total loss will not exceed 10%. Drop of lettuce (S. minor) was present

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[1] In the report of the second visit, PDR, Feb. 22, p. 169, the next to the last sentence should read: "The seed had been sown thinly . . ." instead of thickly as written.

in several small areas in two frames at Farm 18, where the same trouble had been found earlier in cauliflower. The cauliflower had been removed and the frames had been replanted to lettuce.

Gray mold (Botrytis sp.) was affecting about 10% of the plants at Farm 11 (observed on previous trip) and was found in inconsiderable amounts at Farms 12 and 15.

At Farm 12 the lettuce plants that had survived the earlier root injury (cause undetermined) seemed as well grown as unaffected plants in nearby frames, and the stand was good. The injury was present on younger plants in another frame and was observed in an early stage. It seems to occur as follows:

Young plants with 2 or sometimes 3 true leaves are dwarfed and show yellowed leaves and cotyledons. A portion of the underground stem (not the root) is softened and browned, and split open, with the outer bark-tissues peeling away. At this stage no fungus has been seen in the browned tissues. Subsequently blackening (brown under the microscope) extends all the way down the stem and main root. Its cause is not yet known. The affected axis frequently becomes decorticated and eventually dies. Adventitious roots appear early from above, occasionally directly from the stem-lesion. These lateral roots are usually healthy though some have been seen with brown ends containing the fungus. Many of the plants eventually recover.

The idea entertained earlier that this injury might be induced by an excess of soluble salts in the soil is not supported by the results of conductivity-tests performed by Dr. O. W. Davidson of the New Jersey Experiment Station. His report is as follows:

	Conductivity X 10,000 M hos	Percentage of soluble salts in soil
Top inch of soil	7.1	0.04
Third inch of soil	5.4	0.03

CAULIFLOWER AND CABBAGE. Damping-off of cauliflower (Rhizoctonia sp.) had practically stopped at Farm 16, and the stem and root rot (Rhizoctonia sp.) previously seen at Farm 4 had not increased.

Heavy infection by downy mildew (Peronospora parasitica) was present on cauliflower at Farm 14. It had practically cleared up at Farm 17, better areation having become possible.

Young cauliflower and cabbage in flats in the greenhouse at Farm 8 were free from disease but not growing well. The soil was electric-sterilized. They had been started with bottom heat then placed on the straw-covered floor and given no heat until a few days before March 1, but this hardly seems to explain their condition. Root systems are "Bunchy", undeveloped and for the post part unbranched.

Gray mold (Botrytis) was doing slight damage to cabbage seedlings in the propagating house at Farm 18.

VARIOUS. A little damping-off (Pythium sp.) was present on pepper in the greenhouse at Farm 1.

Lettuce seedlings were just up at Farm 7, (the northern-most farm visited). Cabbage plants (from the Selle greenhouse) were being transplanted into frames.

Celery plants were still healthy in greenhouses at Farms 13 and 14. In the house at Farm 14 a few plants still in the cotyledon-stage were curling and dying but were found to be heavily infested with mealy bugs.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

WINTER TRUCK CROP DISEASES IN THE EASTERN CAROLINAS

Alton E. Prince

The following observations were made during the period between December 10 and 17, 1944 in the eastern counties of North Carolina, and during the period between January 22 and 30, 1945 in the Charleston-Beaufort area in South Carolina.

In North Carolina most of the crops observed were of the Cruciferae, namely, broccoli, cabbage, savoy cabbage, kale, kohlrabi, mustard, and radish.

No really serious disease problems were evident at this date. The season had been very favorable and except for cold injury in some most of the crops were in good marketable condition.

Most of the winter truck crops are centered in New Hanover County where inspections were made with Mr. C. M. Ward, Assistant County Agent. The following table shows the area of the crops surveyed, diseases found and their prevalence.

	Area Inspected	Black rot	Yellows	Downy mildew	Cold injury
Broccoli	50	Trace			
Cabbage	30	Trace	Trace	Trace	Present
Savoy Cabbage	10				Present
Kale	8				Trace
Kohlrabi	6			Trace	
Mustard	10				Trace
Radish	50			Trace	50% loss
	164 acres				

From a field of spinach not observed by me, Dr. L. G. Willis, in charge, Soil Research Laboratory at Wilmington, N. C., sent in downy mildew (Peronospora effusa) and reported that this disease covered about 1/5 of the 5-acre field. Dr. Willis also sent leaves infected with Heterosporium variabile, which he reported as more common than the downy mildew.

In Pamlico County 15 acres of cabbages were inspected and only a trace of black rot [Xanthomonas campestris], yellows [Fusarium oxysporum f. conglutinans], downy mildew [Peronospora parasitica], and cold injury were evident.

In Pasquotank County with Mr. A. L. Eagles, County Agent, 25 acres of cabbages were inspected. Conditions were similar to those in Pamlico County, except that here a trace of bacterial soft rot was found. About 75 acres of turnips were inspected where only traces of the usual diseases were evident, but the grower expected this crop to be a total loss because of no market. Downy mildew was also found on small plots of kale and collards.

In Carteret County, accompanied by the County Agent, Mr. R. M. Williams, about 30 acres of mature cabbages and 3 acres of cabbage seed beds were inspected. Only a trace of black rot and downy mildew could be found on the mature cabbage, but downy mildew was prevalent in the cabbage seed beds. In a 1/4-acre bed, 50% of the plants were infected, but yellows was also present and between the 2 diseases, 25% of the plants were killed.

In South Carolina inspections were made with Dr. C. N. Clayton, Pathologist, and Dr. W. C. Barnes, Horticulturist, at the South Carolina Truck Experiment Station, in the Charleston and Beaufort County areas.

The lettuce seed beds were seen just at setting time and several were inspected. One 2 1/2-acre seed bed had at least 5% mosaic and considerable Sclerotinia sclerotiorum damping-off. Other seed beds had traces of mosaic [virus] and Sclerotinia damping-off and some had symptoms of Rhizoctonia damping-off. Downy mildew caused by Bremia lactucae was also present but of minor importance in 2 beds.

One 2-acre seed bed on Yonges Island was almost a total loss because more than 50% of the plants failed to come up, and from counts 40% of the plants present had decayed root systems. After returning to Clemson the writer received from Dr. Clayton specimens of these small succulent plants from which isolations were made. Pellicularia (Rhizoctonia) and Pythium were both present. If the grower had not planted a second seed bed of similar size he would have lost his spring lettuce crop.

Two fields, 5 and 8 acres respectively, of mature cabbage were inspected. Downy mildew was present on most of the plants and Alternaria tenuis, determined by Dr. Olive, occurred on about 10% of the plants, but neither was causing appreciable injury.

A 50-acre field of radish in Beaufort County was found to be nearly 100% infected with the downy mildew fungus, Peronospora parasitica. This crop was probably almost a total loss.

A 30-acre field of broccoli rabe in Beaufort County was found to have about a 10% loss caused by a combination of mosaic, downy mildew and powdery mildew [Erysiphe polygoni], the latter being present only in the imperfect stage.

A 10-acre field of Calabrese broccoli in Beaufort County had nearly 100% of the plants infected with downy mildew, but little damage was being done.

Sclerotinia sclerotiorum was found on collards which, according to Dr. Clayton, was not unusual, and because it was late in the season, no appreciable loss was being caused. However, an important weed-fungus association was found at the Truck Experiment Station. Dr. Clayton discovered 2 weeds, henbit (Lamium amplexicaule) and chickweed, (Stellaria media) being parasitized by this species (det. L. S. Olive). This explains at least in part how this fungus not only carries over but increases during periods when crops are not in the fields. Dr. Clayton stated that last year 50% of a snap bean crop had been killed by this fungus in the same field.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

SWEETPOTATO SOIL ROT SLIP TREATMENT AND VARIETAL REACTION TESTS IN TEXAS

R. D. Watson

A cooperative sweetpotato soil rot test was made at the Sweet Potato Investigations Laboratory, Gilmer, Texas. The land was planted to sweetpotatoes two years before and at that time considerable soil rot (Actinomyces ipomoeae) occurred.

These tests were designed to evaluate certain chemical slip treatments for the control of soil rot and to test a number of new varieties and strains of sweetpotatoes for possible soil rot resistance under Texas conditions.

Table 1. Relative susceptibility of sweetpotato varieties to soil rot.

Variety	Skin color	Flesh color	Total of roots in all plots	Total of roots with soil rot, all plots	Percent of roots infected
B-16	Red	Yellow	330	0	0
T-4018	Gold	White	223	0	0
WM-5A	Red	Cream	202	1	0.5
T-4032	Buff	White	288	4	1.4
T-36-21	Cream	White	272	8	2.9
L-12	Copper	Orange	305	9	3.0
B-32	Red	White	236	12	5.1
B-27	Light Red	Cream	213	13	6.1
L-48	"	Cream	260	15	5.8
Wenholz 1	White	Cream	339	17	5.0
L-24	Cream	Yellow	275	18	6.5
Red Velvet	Red	Salmon Pink	252	24	9.5
L-17	Copper	Dark Pink	205	31	15.1
T-20-8	Cream	Cream	355	33	9.3
L-42x7-39-3	Buff	Cream	167	38	22.8
Porto Rico	Copper	Salmon Pink	274	40	14.6
B-52	Red	White	245	43	17.6
B-2521	Copper	Cream	331	43	13.0
B-107	Red	White	228	46	20.2
L-41	Gold	Yellow	325	46	14.2
L-4-5	Cream	White	186	47	25.3
L-16	Copper	Salmon Pink	341	53	15.5
L-41	Gold	Yellow	283	58	20.5
B-196	Cream	Cream	333	58	17.4
Mameyita	Copper	Salmon Pink	207	65	31.4
L-18	Copper	Cream	263	67	25.5
First Born of Russia	Cream	Cream	269	76	28.3

The chemical treatments of slips were arranged in a randomized plot, 4 replicates to a treatment, and the Porto Rico variety was used. The

effect of these slip treatments on yield are given as follows (regarding the untreated slips in each case as 100): Semesan Bel 115, sulfur dust 93, Fermate dust 108. The percentage of roots with soil rot were: Untreated slips 29.3%, Semesan Bel 35.0%, sulfur 29.2%, and Fermate 28.8%.

The varietal tests were made on the basis of 3 replications. The land proved to be exceptionally uniformly infested with the soil-rot organism, as indicated by the small differences between replications. The differences in yielding ability of the replicates was likewise very small. The varieties are listed in Table 1 according to the number of sweetpotatoes with soil rot. The number of roots produced and the percentage infected with soil rot are also given.

The apparent differences in susceptibility of the varieties to soil rot may indicate possible improvement in new varieties through further breeding for soil-rot resistance. The strains B-16 and T-4018 showed no soil rot in this test, and a number of varieties had more resistance to soil rot than the standard varieties, Porto Rico and Red Velvet, which were about intermediate with respect to soil rot as well as to yield and number of roots produced, in these tests. Attention is called to the strain L-12, an attractive yellow-fleshed variety, which had a high soil-rot resistance as well as high yielding ability.
(TEXAS AGRICULTURAL EXPERIMENT STATION SUBSTATION NO. 2, TYLER, TEXAS).

OTHER REPORTS ON DISEASES OF VEGETABLE CROPS

Reports are of Emergency Plant Disease Prevention Project surveys.

GARDEN BEET foliage in 2 plantings observed south of San Jose, Santa Clara County, CALIFORNIA was moderately to severely affected by rust (Uromyces betae). -- Henry Schneider, Feb. 5-10.

BROAD BEAN OR HORSE BEAN (Vicia faba). One field of horse beans observed in Kern County, CALIFORNIA, contained about 5% of stunted plants which were characterized by some dead black leaves, red streaks along the veins, blackened areas on the stems, and occasional rotted roots (probably caused by Rhizoctonia solani). Dr. William C. Snyder observed that necrosis was present in the phloem and was of the opinion that some of the symptoms expressed were due to virus. -- Henry Schneider, Dec. 17-23.

In southern LOUISIANA, although broad bean is not grown on a large commercial scale, the total acreage in small fields and gardens is rather large. At this time (February 19-March 2), plants are in full bloom and some pods are beginning to set. A leaf spot that causes burning and death of the leaves is becoming prominent in the vicinity of Baton Rouge. Perithecia of a species of Mycosphaerella, presumably M. pinodes, are abundant in necrotic tissue, particularly on the margins and tips of the leaves. Thus far, the lower third of the leaves are diseased. -- Douglas C. Bain.

CRUCIFEROUS CROPS. Much of the early spring cabbage in the Crystal Springs area of southwestern MISSISSIPPI had been set out in the field by the beginning of March. Little disease was seen. In every field visited traces of downy mildew (Peronospora parasitica) were found but no

damage was evident. Some injury, however, was apparent on plants still in coldframes. Alternaria leaf spot (Alternaria sp.) is responsible for considerable damage in fields of late turnips near LaPlace in southern LOUISIANA. This disease renders the greens unfit for market and thereby causes considerable loss to the grower. -- Douglas C. Bain, Feb. 19-Mar. 2.

In plantings near Colma, San Mateo County, CALIFORNIA, black ring (virus) affected occasional cabbage plants. The older leaves of nearly mature cabbage and Brussels sprouts plants were being killed by ringspot (Mycosphaerella brassicicola), but the damage was not of economic importance. About 5% of the plants in one 5-acre field of Brussels sprouts were being rotted off by cottony rot (Sclerotinia sclerotiorum). -- Henry Schneider, Feb. 5-10.

In southern CALIFORNIA, downy mildew was 100% prevalent on the older leaves of the cabbage plants in several fields visited in Los Angeles County during the week ending February 3. It was commonly encountered in all crucifer plantings inspected in the vicinity of San Juan Capistrano, San Diego County, February 6, but was causing no damage. A trace of ringspot was noted in one small planting of broccoli. -- E. W. Bodine.

FENNEL (FINOCCHIO). In a 20-acre field south of San Jose, in Santa Clara County, CALIFORNIA, 75% of the plants were rotted by cottony rot (Sclerotinia sclerotiorum). -- Henry Schneider, Feb. 5-10.

LETTUCE. Watery soft rot (Sclerotinia sclerotiorum) had caused almost a total loss in 2 fields of about 1 acre each in Plaquemines Parish in southern LOUISIANA. -- Douglas C. Bain, Feb. 5-17.

Drop (Sclerotinia sclerotiorum), mosaic (virus), and big vein (virus) were found in trace amounts in some of the fields examined in the Imperial Valley of southern CALIFORNIA, (Jan. 23-27). Drop occurred in traces in one field observed in the vicinity of San Juan Capistrano, San Diego County (Feb. 6). -- E. W. Bodine.

ONION. Several small plantings were examined in Los Angeles County, CALIFORNIA. Pink root (Phoma terrestris) was found in small amounts in one field. -- E. W. Bodine, week ending Feb. 3.

PEAS. In southern CALIFORNIA plantings of peas were examined in the vicinity of San Juan Capistrano, San Diego County, with Dr. John T. Middleton of the University of California, February 6. In one planting, 5% of the plants were infected with scab (Cladosporium pisicola) and 10% with mosaic (pea virus 1). In another field in the coastal area, 100% of the plants were affected with powdery mildew (Erysiphe polygoni), and trace amounts of scab and mosaic were found. -- E. W. Bodine.

PEPPER. Damping-off of undetermined cause is taking a heavy toll of seedlings in coldframes in the vegetable areas above and below New Orleans, LOUISIANA. -- Douglas C. Bain, Feb. 5-17.

One old planting of peppers was inspected near Niland in southern CALIFORNIA. Mosaic (virus), and blight due to Phytophthora capsici, were commonly found. -- E. W. Bodine, Jan. 23-27.

SPINACH. Damage due to downy mildew (Peronospora effusa) and leaf spot (Heterosporium variabile) has been considerable in many fields below New Orleans, LOUISIANA. It was of interest to note that the 2 diseases were almost invariably confined to separate fields, i.e., in fields where downy mildew infection was heavy there was practically no leaf spot, and vice versa. -- Douglas C. Bain, Feb. 5-17.

SQUASH. Powdery mildew (Erysiphe cichoracearum) was found in trace amounts in several patches of squash grown under "brush protectors" (made of arrow-weed and paper) in the vicinity of El Centro in the Imperial Valley of CALIFORNIA. -- E. W. Bodine, Jan. 23-27.

FEBRUARY WEATHER AND THE WINTER OF 1944 - 1945

(From U. S. Department of Commerce Weather Bureau, Weekly Weather and Crop Bulletin for week ending March 6, 1945).

February Weather

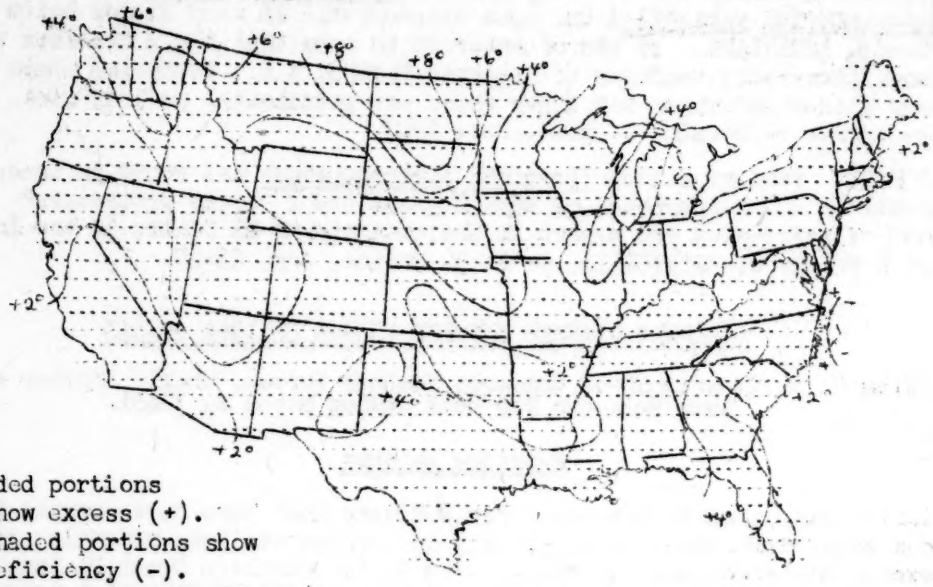
Map I shows that temperatures for February 1945 were above normal in practically the entire country, only one or two stations reporting below normal. The month was especially warm in the northern Great Plains, much of the Great Basin, the Northwest, and in localities of the Lake region and the Southeast. Outside of the immediate coastal region of the East and the far Southwest, temperatures averaged from 2° above normal to as much as 9° and 10° above in the northern Great Plains.

Map II shows that the precipitation was above normal in a wide belt from western Pennsylvania and New York southwestward to central and eastern Texas. Above-normal amounts are also shown in the upper Mississippi Valley, the southwestern Great Plains, and rather large areas in the far West and extreme East. Rather marked deficiencies in precipitation occurred in Florida and the Southwest, while less severe anomalies were reported in the Lake region and adjacent sections, the Northeast, and in much of the Great Basin and Rocky Mountain area.

The Winter of 1944-1945

Map III shows that the meteorological winter of December 1944 through February 1945 was generally cool east of the Mississippi Valley and rather warm to the westward. The winter was especially cool in a large area, comprising most of the Ohio Valley and the interior of the Northeast where the departures for the period ranged from 2° to 4° below normal. A marked warm area is shown in the northern Great Plains where plus departures ranged from 4° to 8°, but, except for rather limited localities, the winter averaged only slightly warmer than usual in the West.

Map IV shows that the total precipitation for the winter reflects strongly the February situation, with above-normal amounts extending over the same area as in February from New York to Texas, but also extending northward over the central Great Plains and into localities of the upper Mississippi Valley. Local amounts in excess of normal also occurred in portions of the Rocky Mountain region and in the far West. Rather serious deficiencies are shown in the Southeast, the central Mississippi Valley, the Lake region, and in much of the Great Basin and the interior of the far Northwest. Most Atlantic States were slightly deficient in precipitation, while portions of Nevada and California were well below normal.

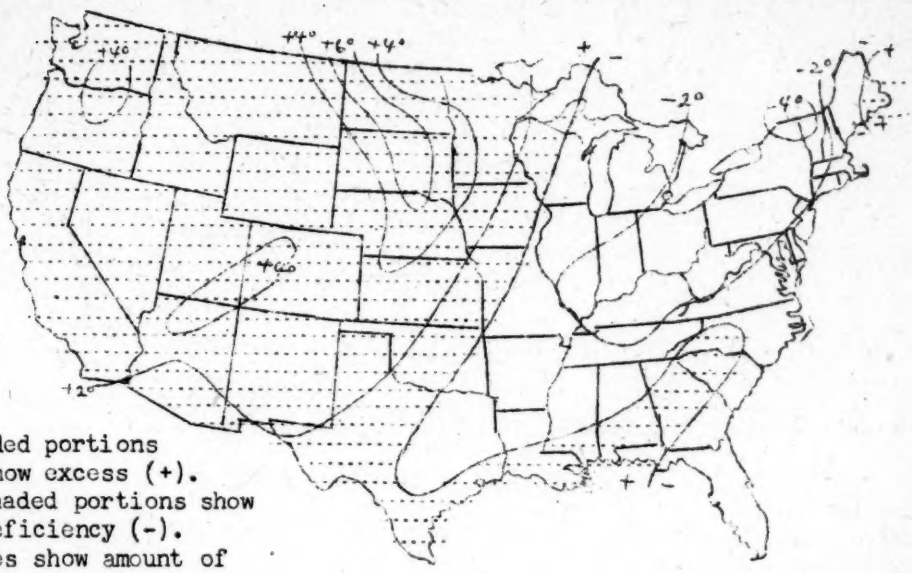


Shaded portions show excess (+).
Unshaded portions show deficiency (-).
Lines show amount of excess or deficiency.

Map I. - Departure of mean temperature from the normal for February 1945.

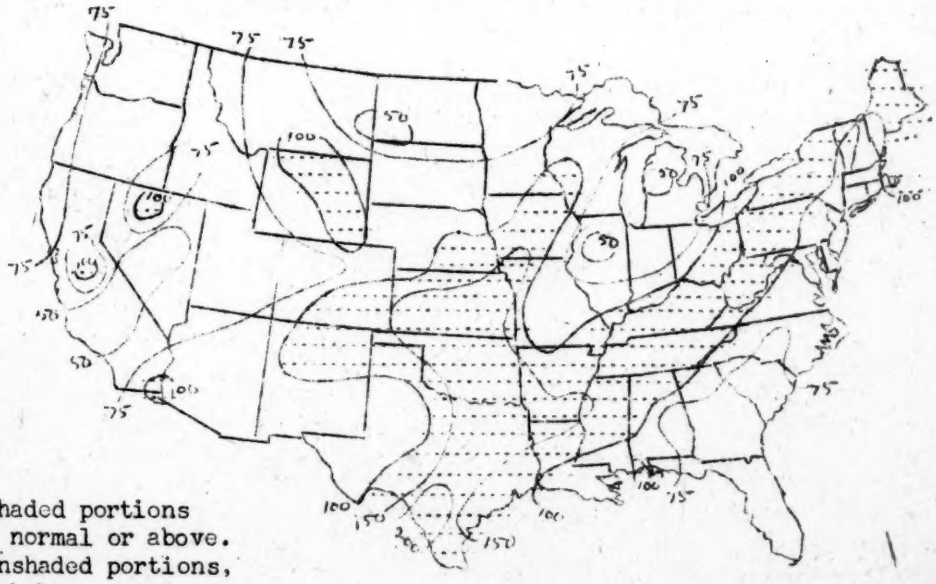
Shaded portions normal or above.
Unshaded portions, below normal.

Map II. - Percentage of normal precipitation, for February 1945.



Shaded portions show excess (+).
Unshaded portions show deficiency (-).
Lines show amount of excess or deficiency

Map III. - Departure of Mean Temperature from the Normal for the Winter (December-February) 1944-45.



Shaded portions normal or above.
Unshaded portions, below normal.

Map IV. - Percentage of Normal Precipitation by States, for the Winter (December-February) 1944-45.